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<110> Takara Shuzo Co., Ltd.

<120> DNA POLYMERASES WITH ENHANCED LENGTH OF PRIMER EXTENSION

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<150> US 08/021,623

<151> 1993-02-19

<150> US 08/483,535

<151> 1995-06-07

<150> US 08/931,818

<151> 1997-09-16

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<170> PatentIn version 3.0

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Leu Ser Arg Lys Glu Pro Met Trp Ala Asp Leu Leu Ala Leu Ala Ala	
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gcc agg ggg ggc cgg gtc cac cgg gcc ccc gag cct tat aaa gcc ctc	192
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agg gac ctg aag gag gcg cgg ggg ctt ctc gcc aaa gac ctg agc gtt	240
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Leu Ala Leu Arg Glu Gly Leu Gly Leu Pro Pro Gly Asp Asp Pro Met	
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Leu Leu Ala Tyr Leu Leu Asp Pro Ser Asn Thr Thr Pro Glu Gly Val	
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35 40 45

Ala Arg Gly Gly Arg Val His Arg Ala Pro Glu Pro Tyr Lys Ala Leu
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Arg Asp Leu Lys Glu Ala Arg Gly Leu Leu Ala Lys Asp Leu Ser Val
65 70 75 80

Leu Ala Leu Arg Glu Gly Leu Gly Leu Pro Pro Gly Asp Asp Pro Met
85 90 95

Leu Leu Ala Tyr Leu Leu Asp Pro Ser Asn Thr Thr Pro Glu Gly Val
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Ala Arg Arg Tyr Gly Gly Glu Trp Thr Glu Glu Ala Gly Glu Arg Ala
115 120 125

Ala Leu Ser Glu Arg Leu Phe Ala Asn Leu Trp Gly Arg Leu Glu Gly
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Glu Glu Arg Leu Leu Trp Leu Tyr Arg Glu Val Glu Arg Pro Leu Ser
145 150 155 160

Ala Val Leu Ala His Met Glu Ala Thr Gly Val Arg Leu Asp Val Ala
165 170 175

Tyr Leu Arg Ala Leu Ser Leu Glu Val Ala Glu Glu Ile Ala Arg Leu
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Glu Ala Glu Val Phe Arg Leu Ala Gly His Pro Phe Asn Leu Asn Ser
195 200 205

Arg Asp Gln Leu Glu Arg Val Leu Phe Asp Glu Leu Gly Leu Pro Ala
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Ile Gly Lys Thr Glu Lys Thr Gly Lys Arg Ser Thr Ser Ala Ala Val

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Tyr Arg Glu Leu Thr Lys Leu Lys Ser Thr Tyr Ile Asp Pro Leu Pro			
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Thr Ala Thr Ala Thr Gly Arg Leu Ser Ser Ser Asp Pro Asn Leu Gln			
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Val Phe Gln Glu Gly Arg Asp Ile His Thr Glu Thr Ala Ser Trp Met			
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Lys Thr Ile Asn Phe Gly Val Leu Tyr Gly Met Ser Ala His Arg Leu			
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Ser Gln Glu Leu Ala Ile Pro Tyr Glu Glu Ala Gln Ala Phe Ile Glu			
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Arg Tyr Phe Gln Ser Phe Pro Lys Val Arg Ala Trp Ile Glu Lys Thr			
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Leu Glu Glu Gly Arg Arg Arg Gly Tyr Val Glu Thr Leu Phe Gly Arg			
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Arg Arg Tyr Val Pro Asp Leu Glu Ala Arg Val Lys Ser Val Arg Glu			
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SEQUENCE LISTING

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<120> DNA POLYMERASES WITH ENHANCED LENGTH OF PRIMER EXTENSION

<130> TKR2050.1

<150> US 08/021,623

<151> 1993-02-19

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<170> PatentIn version 3.0

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Leu Ser Arg Lys Glu Pro Met Trp Ala Asp Leu Leu Ala Leu Ala Ala	
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Ala Arg Gly Gly Arg Val His Arg Ala Pro Glu Pro Tyr Lys Ala Leu	
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agg gac ctg aag gag gcg cgg ggg ctt ctc gcc aaa gac ctg agc gtt	240
Arg Asp Leu Lys Glu Ala Arg Gly Leu Leu Ala Lys Asp Leu Ser Val	
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75	80
ctg gcc ctg agg gaa ggc ctt ggc ctc ccg ccc ggc gac gac ccc atg	288
Leu Ala Leu Arg Glu Gly Leu Gly Leu Pro Pro Gly Asp Asp Pro Met	
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ctc ctc gcc tac ctc ctg gac cct tcc aac acc acc ccc gag ggg gtg	336
Leu Leu Ala Tyr Leu Leu Asp Pro Ser Asn Thr Thr Pro Glu Gly Val	
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gcc cgg cgc tac ggc ggg gag tgg acg gag gag ggc ggg gag cgg gcc	384
Ala Arg Arg Tyr Gly Gly Trp Thr Glu Glu Ala Gly Glu Arg Ala	
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35 40 45

Ala Arg Gly Gly Arg Val His Arg Ala Pro Glu Pro Tyr Lys Ala Leu
50 55 60

Arg Asp Leu Lys Glu Ala Arg Gly Leu Leu Ala Lys Asp Leu Ser Val
65 70 75 80

Leu Ala Leu Arg Glu Gly Leu Gly Leu Pro Pro Gly Asp Asp Pro Met
85 90 95

Leu Leu Ala Tyr Leu Leu Asp Pro Ser Asn Thr Thr Pro Glu Gly Val
100 105 110

Ala Arg Arg Tyr Gly Gly Glu Trp Thr Glu Glu Ala Gly Glu Arg Ala
115 120 125

Ala Leu Ser Glu Arg Leu Phe Ala Asn Leu Trp Gly Arg Leu Glu Gly
130 135 140

Glu Glu Arg Leu Leu Trp Leu Tyr Arg Glu Val Glu Arg Pro Leu Ser
145 150 155 160

Ala Val Leu Ala His Met Glu Ala Thr Gly Val Arg Leu Asp Val Ala
165 170 175

Tyr Leu Arg Ala Leu Ser Leu Glu Val Ala Glu Glu Ile Ala Arg Leu
180 185 190

Glu Ala Glu Val Phe Arg Leu Ala Gly His Pro Phe Asn Leu Asn Ser
195 200 205

Arg Asp Gln Leu Glu Arg Val Leu Phe Asp Glu Leu Gly Leu Pro Ala
210 215 220

Ile Gly Lys Thr Glu Lys Thr Gly Lys Arg Ser Thr Ser Ala Ala Val

225

230

235

240

Leu Glu Ala Leu Arg Glu Ala His Pro Ile Val Glu Lys Ile Leu Gln
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Tyr Arg Glu Leu Thr Lys Leu Lys Ser Thr Tyr Ile Asp Pro Leu Pro
260 265 270

Asp Leu Ile His Pro Arg Thr Gly Arg Leu His Thr Arg Phe Asn Gln
275 280 285

Thr Ala Thr Ala Thr Gly Arg Leu Ser Ser Ser Asp Pro Asn Leu Gln
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Asn Ile Pro Val Arg Thr Pro Leu Gly Gln Arg Ile Arg Arg Ala Phe
305 310 315 320

Ile Ala Glu Glu Gly Trp Leu Leu Val Ala Leu Asp Tyr Ser Gln Ile
325 330 335

Glu Leu Arg Val Leu Ala His Leu Ser Gly Asp Glu Asn Leu Ile Arg
340 345 350

Val Phe Gln Glu Gly Arg Asp Ile His Thr Glu Thr Ala Ser Trp Met
355 360 365

Phe Gly Val Pro Arg Glu Ala Val Asp Pro Leu Met Arg Arg Ala Ala
370 375 380

Lys Thr Ile Asn Phe Gly Val Leu Tyr Gly Met Ser Ala His Arg Leu
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Ser Gln Glu Leu Ala Ile Pro Tyr Glu Glu Ala Gln Ala Phe Ile Glu
405 410 415

Arg Tyr Phe Gln Ser Phe Pro Lys Val Arg Ala Trp Ile Glu Lys Thr
420 425 430

Leu Glu Glu Gly Arg Arg Gly Tyr Val Glu Thr Leu Phe Gly Arg
435 440 445

Arg Arg Tyr Val Pro Asp Leu Glu Ala Arg Val Lys Ser Val Arg Glu
450 455 460

Ala Ala Glu Arg Met Ala Phe Asn Met Pro Val Gln Gly Thr Ala Ala
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Asp Leu Met Lys Leu Ala Met Val Lys Leu Phe Pro Arg Leu Glu Glu
485 490 495

Met Gly Ala Arg Met Leu Leu Gln Val His Asp Glu Leu Val Leu Glu
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Ala Pro Lys Glu Arg Ala Glu Ala Val Ala Arg Leu Ala Lys Glu Val
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